Metacognition

Metacognition is associated with intelligence and executive function processes in the overseeing and regulation of thinking (Livingston, 2003). Cognition is the process of organizing and storing new information. Metacognition is how well we understand and control these processes. Learning is improved when you are aware of your thinking and take action to regulate it. This is achieved by strategically creating and following an intentional plan as you monitor and evaluate behaviour, habits, routines, skill development, associated outcomes and natural consequences. Metacognition occurs when you are aware that you must regulate your thoughts and behaviour and follow a plan to achieve your goals. When you are aware of and regulate your thinking, you study more efficiently and productively.

Defining Features:

- Higher order thinking,
- Involves active control over the cognitive processes engaged in learning,
- Two sub-components: knowledge about thinking and regulation of thinking (Flavell, 1979, 1987).

1. **Metacognitive Knowledge** is what we know about our cognitive processes; what we know about how we learn includes strategies, procedures and conditions.
   - Three forms of knowledge:
     - Person knowledge: **who I am.**
     - Task knowledge: **what I do.**
     - Strategy knowledge: **how I do.**
   - **Knowledge of Cognition**
     - Declarative: knowing about
     - Conditional: knowing when and why
     - Procedural: knowing how

2. **Metacognitive Regulation** is how we use what we know about our thinking process to remember and learn (facilitate memory and learning outcomes).
   - **Regulation of Cognition:**
     - Planning and goal setting
     - Monitoring performance
     - Evaluating outcomes
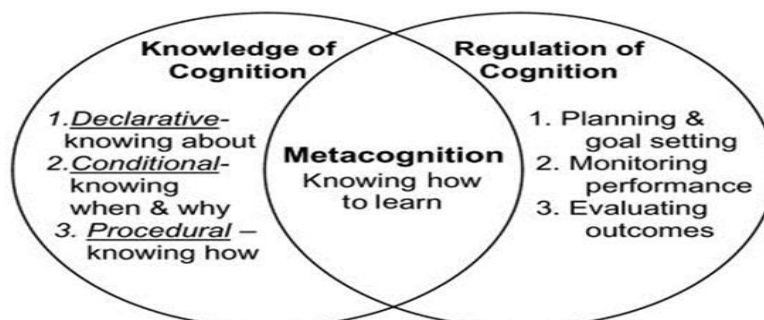
Plan to Think Metacognitively

I am aware that I am engaging in metacognition when:
- I change my study strategy when I realize I'm having trouble learning something.
- It occurs to me that I must double-check, before accepting something as a fact.
- I decide I'd better scrutinize each alternative, before choosing which is best for me.
- I'm aware when I'm unsure what to do, so I seek advice or additional resources.

Evaluate Your Metacognitive Ability

- Ask yourself:
  - "What are my problem solving strategies?"
    - Engage in self reflection and monitoring.
    - Evaluate what works and what doesn't.
  - What are the cognitive and motivational characteristics of my thinking?
  - How well do I perform academically? What are my strengths and challenges?
  - What learning development should I focus on this term?
    - Study skills: reading, exam preparation, notetaking.
    - Time management: goal setting, prioritizing, decreasing procrastination.
    - Writing skills: pre-writing strategies, writing process, revision.
    - Self Awareness: strengths, motivation, mental health, resilience.
  - What are the campus resources available to support my learning development?

Monitor Metacognition

- Consider:
  - What do I think about?
    - What are the messages that run through my mind?
    - What do I tell myself about my ability, successes, challenges, and failures?
  - How do I regulate my thinking?
    - How do I plan, manage and evaluate information?
    - How do I monitor comprehension and understanding of information?
    - How do I deal with counterproductive messages; how do I balance negativity?
    - What are some of my most effective problem solving strategies?
    - What are some of my least effective problem solving strategies?
    - Have I developed my strategies into habits? Are my habits effective?
  - What is my motivation?
    - What motivates me? What and who inspires me? Why do I procrastinate?
  - How do I think and learn best?
    - Do I understand what helps me learn effectively?
    - How and how quickly do I process information?

References
Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist, 34*(10)*,* 906-911.
Flavell, J. H. (1987). Speculations about the nature and development of metacognition. In F. E. Weinert & R. H. Kluwe (Eds.), *Metacognition, Motivation and Understanding* (pp. 21-29). Hillside, New Jersey: Lawrence Erlbaum Associates.
Livingston, J. (2003). *Metacognition: An overview*. [Report]. Retrieved from https://eric.ed.gov/?id=ED474273